

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for loading a plurality of liquid samples into a plurality of through-hole arrays, the liquid samples residing in wells of a microtiter plate characterized by a well-to-well spacing, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces and characterized by a hole spacing that is an integral fraction of the well-to-well spacing of the microtiter plate, the method comprising:

stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension;

positioning an array of transfer members, each transfer member disposed for drawing liquid from a distinct well of the microtiter plate;

drawing liquid samples from the wells of the microtiter plate to each of the transfer members;

registering the array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array; ~~and~~

applying a pressure to the transfer members to dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and

removing the pressure from the transfer members to break the fluidic bridge;
thereby depositing liquid samples from each transfer member into a plurality of through-holes.

2. (Canceled)

3. (Currently amended) A method in accordance with claim 1, wherein the ~~step of dispensing the liquid samples from the transfer members includes expelling liquid from a capillary~~ are selected from the group consisting of: capillaries, pipettes, and syringes.

4.-8. (Canceled)

9. (Previously presented) A method in accordance with claim 1, wherein during the step of dispensing the liquid samples from the transfer members, surface tension draws fluid into the through-holes.

10.-11. (Canceled)

12. (Previously presented) A method in accordance with claim 1, wherein s is less than the hole spacing of the plurality of through-hole arrays.

13.-16. (Canceled)

17. (New) A method for loading a plurality of liquid samples into a plurality of through-hole arrays, the liquid samples residing in wells of a microtiter plate characterized by a well-to-well spacing, the through-hole arrays including a platen having a plurality of through-holes, the platen having an hydrophobic surface and the through-holes having a hydrophilic surface, the through-hole array, the method comprising:

stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension;

positioning an array of transfer members, each transfer member disposed for drawing liquid from a distinct well of the microtiter plate;

drawing liquid samples from the wells of the microtiter plate to each of the transfer members;

registering the array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array;

applying a pressure to the transfer members to dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and

removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes.

18. (New) A method in accordance with claim 17, wherein the transfer members are selected from the group consisting of: capillaries, pipettes, and syringes.

19. (New) A method in accordance with claim 17, wherein during the step of dispensing the liquid samples from the transfer members, surface tension draws fluid into the through-holes.

20. (New) A method in accordance with claim 17, wherein during the step of dispensing the liquid samples from the transfer members, surface tension holds fluid in the through-holes.

21. (New) A method in accordance with claim 17, wherein s is less than the hole spacing of the plurality of through-hole arrays.

22. (New) A method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a plurality of through-holes, the platen having an hydrophobic surface and the through-holes having a hydrophilic surface, the through-hole array, the method comprising:

stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension;

registering an array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array; and

applying a pressure to the transfer members to dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays;

thereby depositing liquid samples from each transfer member into a plurality of through-holes.

23. (New) A method in accordance with claim 22, further comprising:
removing the pressure from the transfer members to break the fluidic bridge.
24. (New) A method in accordance with claim 22, wherein the transfer members are selected from the group consisting of: capillaries, pipettes, and syringes.
25. (New) A method in accordance with claim 22, wherein during the step of dispensing the liquid samples from the transfer members, surface tension draws fluid into the through-holes.
26. (New) A method in accordance with claim 22, wherein during the step of dispensing the liquid samples from the transfer members, surface tension holds fluid in the through-holes.
27. (New) A method in accordance with claim 22, wherein s is less than the hole spacing of the plurality of through-hole arrays.